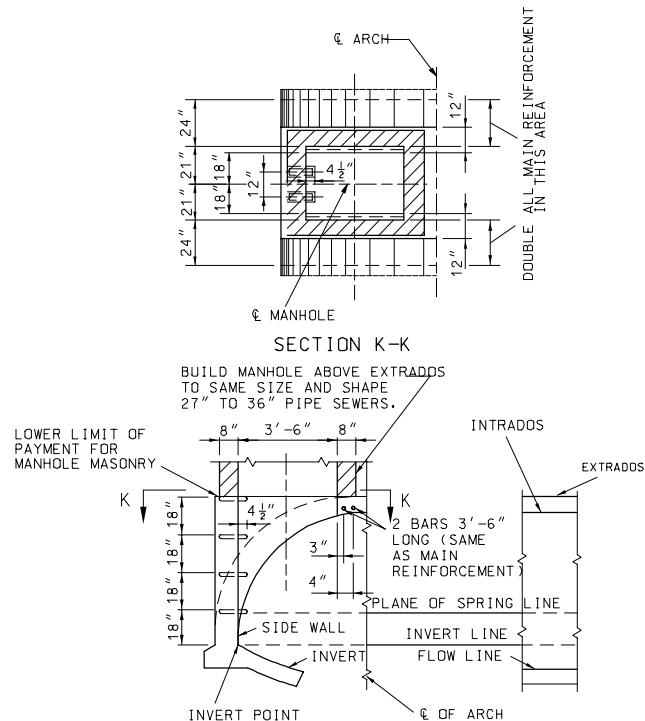
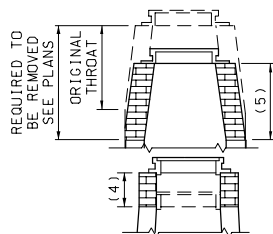


VERTICAL SECTION THRU CENTERLINE
TERMINAL MANHOLE



NOTE: FOR SEWERS LARGER THAN 20'-0" DIA. SEE SPEC. DETAILS.

VERTICAL SECTION THRU CENTERLINE
MANHOLE ON CONCRETE
SEWERS



(4) AMOUNT OF RAISE - ALL NEW MATERIAL
(5) REBUILT THROAT TAPER SAME AS ORIGINAL

ADJUSTING EXISTING
MANHOLE TO GRADE

GENERAL NOTES:

BRICK FOR MANHOLES SHALL BE GRADE MM. AND BRICK FOR SEWERS SHALL BE GRADE SM.

ALL PIPE CONNECTED WITH A MANHOLE WILL BE MEASURED AND PAID FOR TO THE CENTER OF THE MANHOLE. THE ENDS OF ALL PIPE SHALL BE FLUSH WITH THE INSIDE FACE OF THE MANHOLE.

IN BRICK MANHOLES ON REINFORCED CONCRETE OR BRICK SEWERS MORE THAN 36 INCHES IN DIAMETER, ONLY THAT PORTION OF THE MANHOLE ABOVE THE TOP OF THE LARGER PIPE WILL BE PAID FOR AS BRICK MASONRY. ANY AND ALL PORTIONS BELOW THE TOP OF THE LARGEST PIPE WILL BE CONSIDERED AND PAID FOR AS PIPE.

EVACUATION WILL BE COMPUTED AND PAID FOR AS A PRISM, WHOSE AREA WILL BE EQUAL TO THE BASE OF THE MANHOLE.

INVERT SHALL BE COMPUTED AND CONSTRUCTED TO A HEIGHT EQUAL TO THREE-QUARTERS THE DIAMETER OF THE OUTLET PIPE.

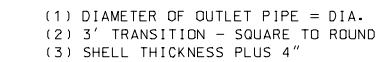
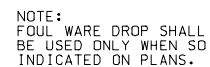
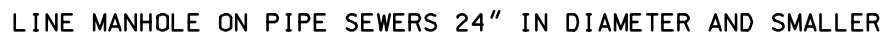
VOLUME OF TAPERED SECTIONS WILL BE COMPUTED BY THE PRISMAL FORMULA. THE ARC AT MIDSECTION OF A TAPER FROM SQUARE TO ROUND IS: $0.250^2 (0.25 p1 + 2 \log \tan (0.375 p1) + 2 \tan (0.25 p1)) = 0.88770^2$.

FOR DETAILS OF MANHOLE FRAME AND COVER, SEE SHEET 3.

THE ENTIRE EXTERIOR SURFACE OF BRICK MANHOLES SHALL BE COATED WITH A 1/2" THICKNESS OF MORTAR.

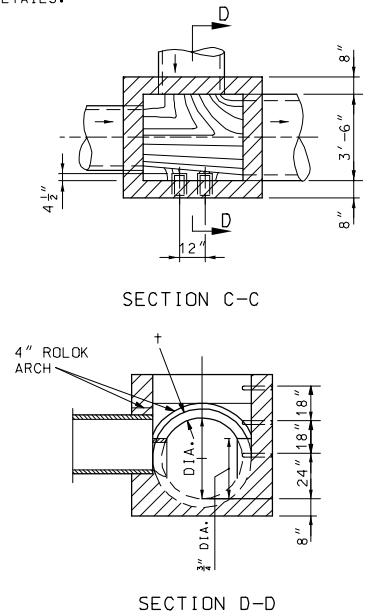
NO DIRECT PAYMENT WILL BE MADE FOR CONCRETE ENCASEMENT, FOUL WATER DROPS, AND THE 1/2" COATING OF MORTAR APPLIED TO THE EXTERIOR SURFACE OF BRICK MANHOLES.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
BRICK MANHOLES			
DATE: _____	EFFECTIVE: 07-01-2004	610.20F	1/4



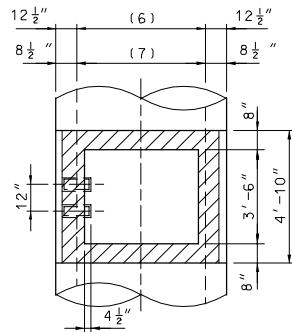
VERTICAL SECTION THRU CENTERLINE

LINE MANHOLE ON PIPE SEWERS 27" TO 36" IN DIAMETER



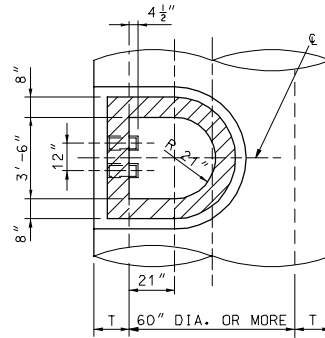
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
	BRICK MANHOLES		
DATE: _____	EFFECTIVE: 07-01-2004	610.20F	2 4

(6) 57" DIA.
(7) 39" TO 54" DIA.

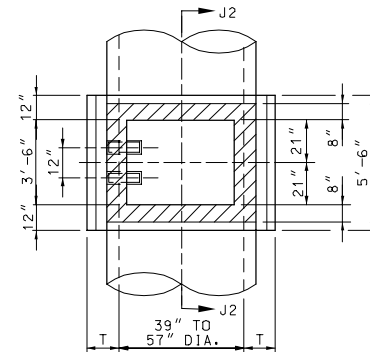


SECTION E-E

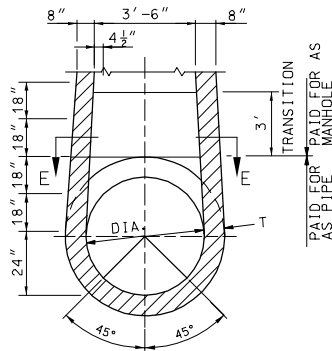
TABLE 1	
INSIDE DIAMETER OF SEWER	MINIMUM T
< 57"	8-1/2"
57" TO 75"	12-1/2"
78" TO 96"	17"
99" TO 108"	21-1/2"



SECTION F-F

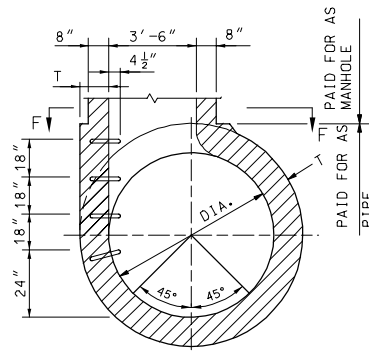


SECTION G-G



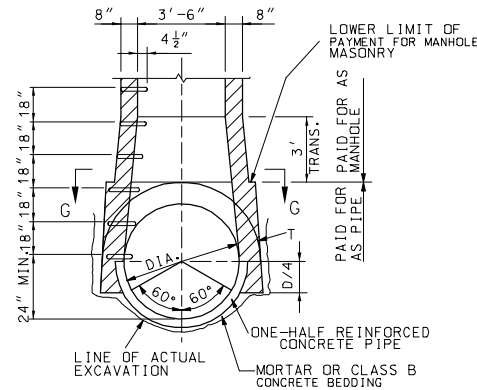
VERTICAL SECTION THRU CENTERLINE

LINE MANHOLE ON BRICK SEWERS 39" TO 57" IN DIAMETER



VERTICAL SECTION THRU CENTERLINE

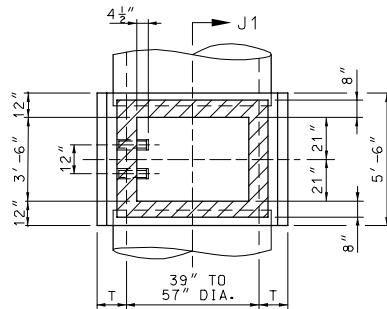
LINE MANHOLE ON BRICK SEWERS AND ON REINFORCED CONCRETE PIPE SEWERS LARGER THAN 57" IN DIAMETER



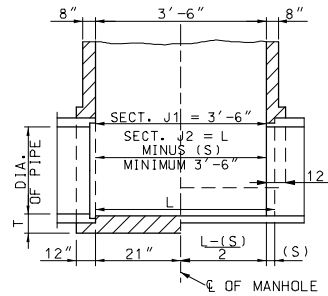
VERTICAL SECTION THRU CENTERLINE

ALTERNATE DETAIL FOR MANHOLE ON REINFORCED CONCRETE PIPE SEWER 39" TO 57" IN DIAMETER

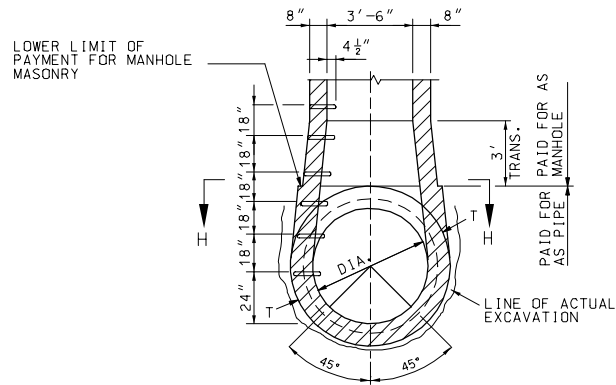
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
BRICK MANHOLES			
DATE: _____	EFFECTIVE: 07-01-2004	610.20F	3
			4



SECTION H-H



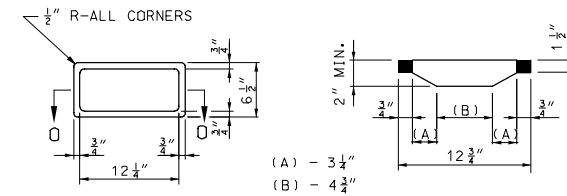
HALF SECTION J1 HALF SECTION J2



VERTICAL SECTION THRU CENTERLINE

MANHOLE ON REINFORCED
CONCRETE PIPE SEWERS
39" TO 57" IN
DIAMETER

DESIGN DATA					
MANHOLE SIZE (INSIDE DIAMETER)	BRICKWORK CU. FT.		EXCAV. CU. YD. 1 FT. M.H.	SIZE OF PIPE (IN.)	ADD FOR INVERT CU. FT.
	FLOOR	1 FT. D			
24" o		5.58			
24" o TO 42" o		7.16			
24" o TO 42" o		8.17			
42" o	12.23	8.73	0.68	8	3.81
				12	4.97
				15	5.50
				18	5.76
				21	5.73
42" □	15.57	11.11	0.86	24	9.83
				27	9.28
				30	8.89
				33	8.25
				36	7.32
42" o TO 42" □		9.88			



MANHOLE STEPS SHALL BE SPACED ON 18" CTRS. VERTICALLY AND STAGGERED AS SHOWN LATERALLY TO A POINT NOT MORE THAN 2' BELOW TOP OF MASONRY.

PLAN SECTION O-O
CAST IRON MANHOLE STEP

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
BRICK MANHOLES			
DATE: _____	EFFECTIVE: 07-01-2004	610.20F	4